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AMERICAN GAS LIGHT JOURNAL

FIFTY-EIGHTH YEAR

VOLUME CV., No. 9.
Whole No. 3051.

NEW YORK, MONDAY, AUGUST 28, 1916.

Subscription, $3 Per Year.
$4 Canada. $5 Foreign.

Back to Mother Earth

When Cast Iron Pipe is used for underground work it is only "going back home"—where it has lived in its crude form (ore) for untold centuries.

The same elements of analysis and structure that have preserved the "native" iron lately discovered in the basaltic lava of Greenland, which is of the exact form produced by the smelting of ores, has also preserved the first Cast Iron Pipe ever made—now in perfect condition, after more than 250 years of underground service.

The first Cast Iron Pipe, like that illustrated here, is uncoated except by its own initial rust coating, which forms an effective barrier against further rust invasion.

THE FIRST CAST IRON PIPE EVER MADE IN THE WORLD'S HISTORY IS STILL IN SERVICE
SERVICE
CAST IRON PIPE
MEASURED BY
CAST IRON PIPE
CENTURIES
MORE THAN 250 YEARS OLD

The Cast Iron Pipe Publicity Bureau

R. C. McWane, Secretary

1 Broadway - - New York

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MANAGERS OF SMALL GAS WORKS

should look into the question of installing

DESSAU VERTICAL RETORTS.

They are built as small as 175,000 cu. ft. per day.
The Investment Cost is low and there is obtained:

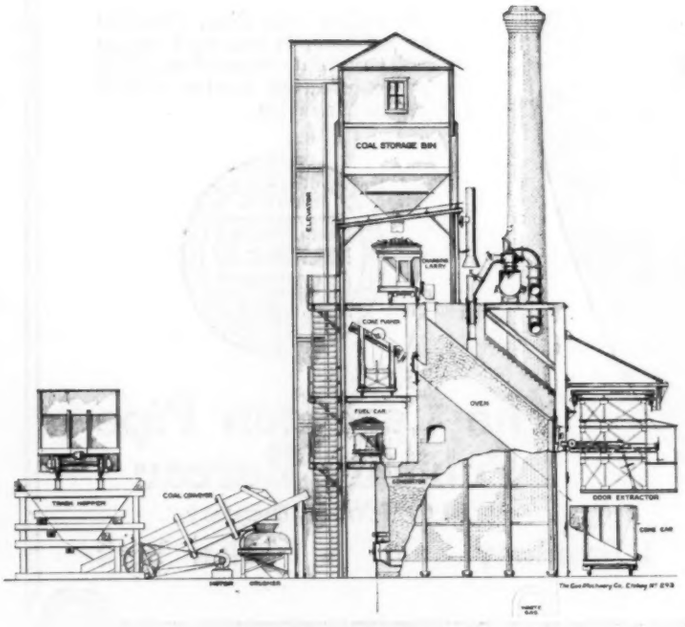
HIGH GAS AND AMMONIA YIELD,
HIGH YIELD OF THIN TAR,
LOW LABOR COST.

WATER GAS CAN BE PRODUCED IN THE RETORTS

Resulting in high yield of standard B.T.U. gas.

THE UNITED GAS IMPROVEMENT CO., PHILADELPHIA,

would be glad to take it up with you.



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PLANTS 350,000 DAILY AND LARGER

INCLINED GAS OVENS

ONE PLANT OPERATING.
3,000,000 Cubic Feet Daily under Construction.

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MINIMUM OF LABOR
TWELVE-HOUR CARBONIZATION
TWO EIGHT-HOUR SHIFTS
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THE GAS MACHINERY CO.

CLEVELAND, OHIO

1859 FIFTY-EIGHTH YEAR 1916

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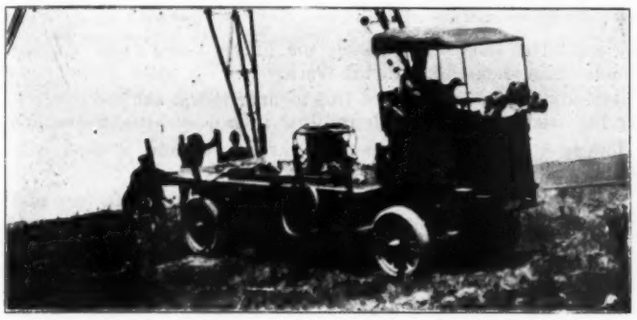
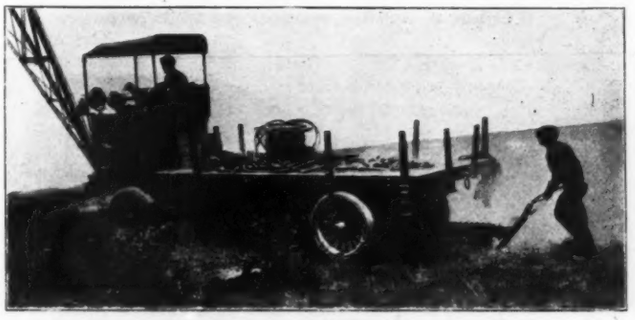


PLOW IN ACTION—TRUCK SURMOUNTING SMALL HAMMOCK



TRENCH PLOWED IN FOUR FURROWS

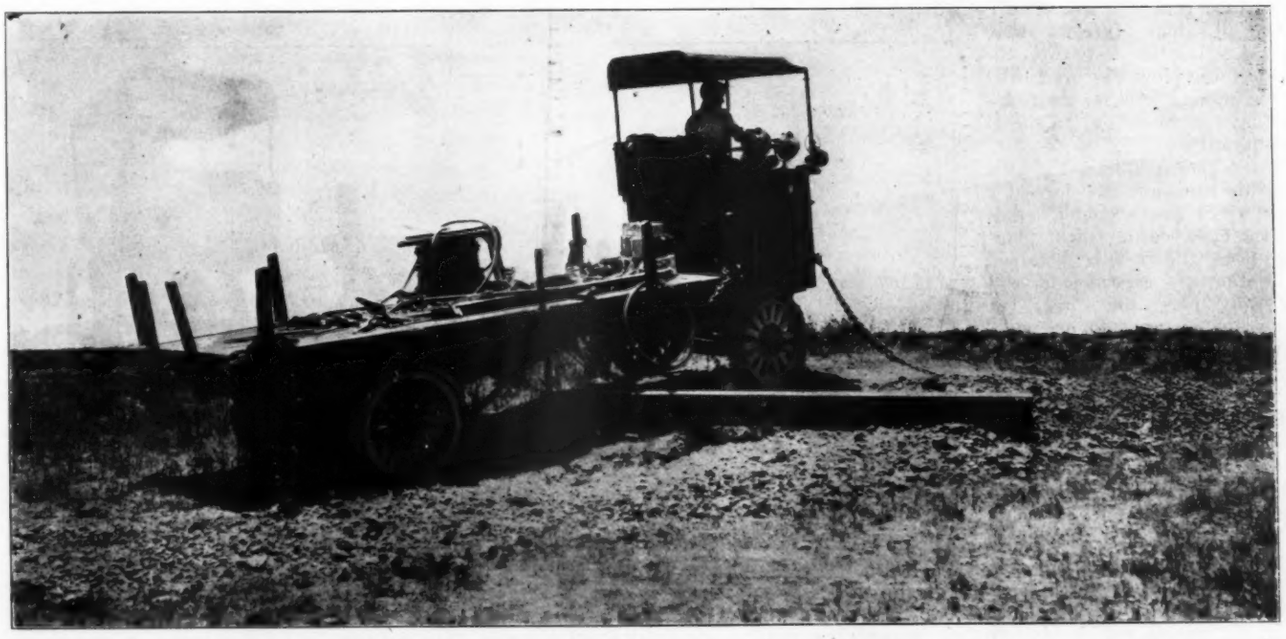
Use Motor Truck to Dig and Backfill Trench for 14,000-Foot High Pressure Main to U. S. Radio Station

Tamping Done by Driving Truck Over New Fill—Cheap and Satisfactory Job Obtained—Line Welded and Covered with Asphalt and Asbestos Paper—Improvements on Methods Employed Will Effect Further Economy in Excavation

By D. J. YOUNG

Superintendent of Gas Department, San Diego Consolidated Gas & Electric Company

In connection with the construction of a 14,000-ft. extension to its 2-in. high pressure mains, the San Diego Consolidated Gas & Electric Company, of San Diego, Cal., used a motor truck to excellent advantage in excavating the trench, in backfilling and in tamping. In the first operation a plow was attached in such a manner that the weight of the truck rested upon it as it dragged it along. For backfilling a filling board was attached and for tamping the truck alone was used.



FILLING BOARD ATTACHED TO TRUCK AT THREE POINTS—SPECIAL SHOE KEPT IT FROM DIGGING INTO GROUND

Line Ran Through Rough Country

The line was built to carry gas to the Chollas Heights Wireless Station of the United States Government, located just outside the city of San Diego. The station is located on a high mesa. The line runs from the valley on one side to the top of the mesa and, on account of the rolling ground, it offered an unusually difficult job of pipe laying. The work was done in July. The last rain on the ground occurred in the early part of March.

The soil was a combination of adobi with a large number of small boulders and cobble-stones and, on account of its being so dry, was extremely hard.

Use of Truck for Digging Trench

In digging the trench a plow was attached to the truck underneath the axle in such a manner that the weight of the truck held the front of the plow down. By means of a shoe, a short distance from the front of the plow, it was possible to regulate the depth of the cut.

TRUCK IN ACTION USING FILLING BOARD—ROUGH GROUND CHARACTERISTIC OF WHOLE WORK

All the man operating the plow had to do was to loosen it up in case it was pulling too heavily on the truck.

A single point plow without a mole-board, similar in type to those used generally in railroad grading work, was used.

In all, four furrows were plowed. In the last two, the beam of the plow was practically on the ground level, so there was nothing left to do but to shovel out the dirt.

Since the completion of the work the company has devised a plow which has a double point, with a mole-board, which, judging from the results obtained in preliminary experiments, will not only plow the ditch, but throw the dirt out to one side, as well.

Filling Board

In backfilling, a filling board with a steel shoe on the bottom was attached to the truck at three points: One chain between the front of the truck and the outside of the board, one from the first standard of the truck to the inside of the board, and a pipe with a shoe on the end attached to the truck so that it had a vertical motion. The shoe was to keep the filling board from digging into the ground underneath the truck.

FILLING DITCH ON DOWNHILL SIDE OF SMALL HILL

After the ditch was filled in this manner it was tamped by driving the truck over it, which resulted in a very satisfactory job.

The pipe line itself was welded throughout and covered with asphalt and asbestos paper.

The work was done by these novel means in a satisfactory and economical manner.

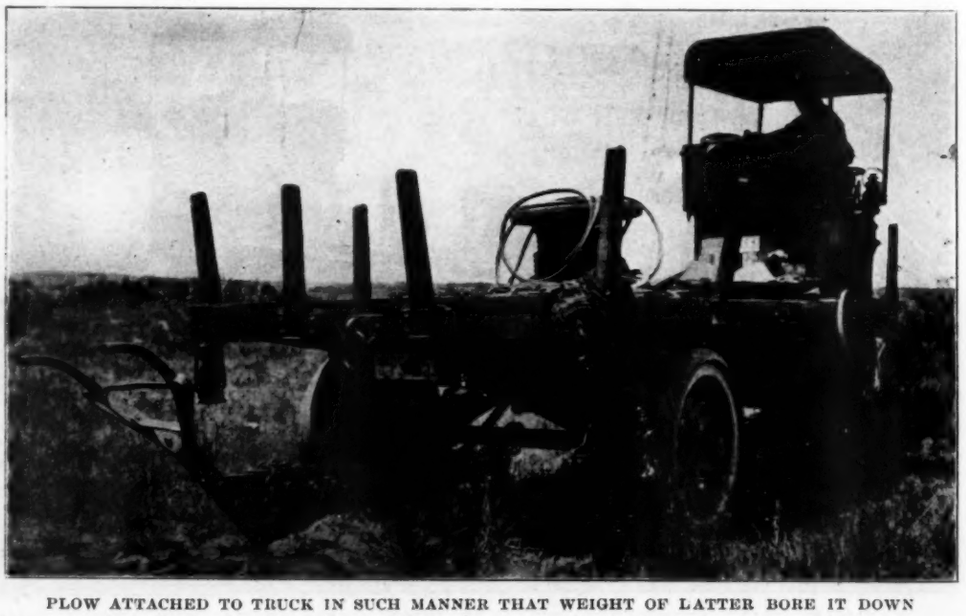
Gas Company Devises Shoe Dryer at Low Cost

A Massachussetts shoe factory recently began manufacturing with electric motor equipment from central station service, having no steam plant on the premises.

Undertaking a special make of shoe, it was found that a warmer and dryer for the soles was required.

The problem was put up to the local gas company, and its manager at once saw an opportunity for utilizing gas. He devised and manufactured a heater equipped with four 2" in. burners, taking about 30 ft. per hour, the cost of labor and materials being only $35.

Since no local machinist was found who could guarantee the production of the heater, the manager himself built the heater, and in 23 hours from the time the requirements were understood, the apparatus was working.



PLOW ATTACHED TO TRUCK IN SUCH MANNER THAT WEIGHT OF LATTER BORE IT DOWN

A More Sympathetic Understanding Between the Utility and the Public Seems to be the Keynote of Future Progress and Improvements

R. A. Wallace, in Presidential Address Before Canadian Gas Association, States That, Although Numbered Amongst the Oldest of the Public Service Utilities, Gas Industry Has Not, By Any Means, Reached the Zenith of its Possibilities

The continued upward trend in the cost of all supplies used in the gas business brings to mind the suggestion that the time has arrived when the public must give consideration, if not to an increase in rates, at least, to less insistent demands for continuous reductions. Although numbered amongst the oldest of the public utilities, the gas industry has by no means reached the zenith of its possibilities. A more sympathetic understanding between the utility and the people seems to be the keynote of future progress and improvements. These points were brought out by R. A. Wallace, in his presidential address before the Canadian Gas Association at its annual meeting in Quebec, Aug. 16-17, from which the following has been abstracted:

New Position Acquired By Gas Industry as a Result of European War

In following the trend of events connected with the lamentable European struggle, one cannot fail to observe that a seemingly new position has been acquired by the gas industry, as the result of its proved value in furnishing material for the solution of problems presented by the multiplied necessities of the military situation.

Not only has an impetus been given to the development of more efficient methods and appliances for the use of gas as a fuel in the manufacturing arts, but an increased activity of research has been promoted into fields hitherto but partially explored, discoveries from which it is earnestly hoped, will bring about an enhanced value of residual products.

The continued upward tendency in the cost of all supplies used in the gas business gives cause for uneasiness, and brings to mind the suggestion that the time has arrived when the public must give consideration, if not to an increase in rates, at least to less insistent demands for continuous reductions.

Public Policy an Important Problem

Of the prominent questions engaging the attention of those having the care and operation of gas supply and similar properties in hand, one of the most important is that of public policy. The theme of providing adequate measures to facilitate the maintenance of harmonious relations between consumers and companies, occupies a leading place in all their deliberations.

The ever increasing importance and value of the services rendered seems to have stirred up a spirit of antagonism in the public mind, so that corporate bodies organized to carry on a public service, are each year becoming, to a greater extent, objects of agitation and clamor. There is a growing demand for more stringent regulations, and a well founded rumor has recently been circulated that attempts are being made, in at least one quarter, to have the inspection and regulation of these properties transferred from the Federal and provincial to the municipal authorities.

While not desiring at this time to discuss the merits or demerits of the points involved, they are sufficiently indicative to impress upon us the wisdom of keeping in close touch with the situation, and also afford material for contemplation to those who are at all interested in the expansion of our business. If we study the proceedings of kindred organizations with a view to determining what measures are being taken to combat such difficulties as may arise in our dealings with the public, we will find a strong tendency towards centralization and an increase in combined activity of the interests affected.

Industry Has By No Means Reached the Zenith of Its Possibilities

Those familiar with the present day phase of the growth of our craft and the circumstances of the times as affecting gas supply, realize that although numbered amongst the oldest of the public service utilities, the industry has by no means reached the zenith of its possibilities. Notwithstanding the efforts put forth by progressive companies, and the commercial strides made in latter years, some of us are still not entirely in accord with the people we serve.

A more sympathetic understanding between the utility and the people seems to be the keynote of future progress and improvements, and is apparently wholly practicable. Each party must understand that the other has rights to be respected as well as duties to be performed. If we can but acquire the habit of viewing matters of difference in a broader spirit, with perhaps a little more regard for the opposite interest, rather than solely from our own standpoint, we will probably apprehend more readily in what direction lies the way out of our difficulties.

We need to bring about the adoption of such policies as will conduce to a clearer understanding of the community of interest which concerns both ourselves and our consumers. If there have been features in our traditional methods or practices which have been a hindrance to our more rapid advancement, they too should be eliminated.

Gas Industry Will Always Be a Factor in the World's Industrial Advancement

Hearing as we have recently so much prediction regarding the coming greatness of our own land, with our association about to enter on the second decade of its existence, representing an industry which has been, and must always remain a potent factor in the world's industrial advancement, we are not cherishing any unwarranted hopes or expectations in believing that it is entering on the most progressive period of its history.

In proportion as we contribute to promote its success, may we expect to share in its increased prosperity.

Consumers' Complaint Meter Satisfies Disgruntled Customers

The consumers' complaint meter is constructed so that its clock work runs for a week, and, when set in the house of a consumer, will absolutely record on the paper chart of the cylinder the exact amount of gas consumed, stated J. B. McNary, of the Canadian Meter Company, in his paper on meters, presented at the recent annual meeting of the Canadian Gas Association. It makes so convincing a record that the consumer cannot dispute the facts shown, and learns to his own satisfaction that his bills are correct.

On the other hand, should the consumer be positive that no all-night lights are used, and yet the meter records consumption during the night period, it would show practically that there is some housepipe leakage in the dwelling.

The mechanism of this meter, or, more properly, the mechanical parts of the complaint device, are extremely simple, being constructed for endurance and reliability so as to give satisfactory service for years. The meter is supplied with double-spring seven-day Seth Thomas clock movement, and one winding of both springs will insure full week's running.

The cylinder is so constructed that in its revolution it gradually works on the worm-gear horizontal shaft from one side of the meter to the other, taking the full seven days to complete the run, the small marker shown in front of the cylinder making an absolute record of gas consumed during each hour of that period. These record sheets or charts are detachable from the cylinder, and upon completion of any week's work may be taken off and new charts substituted, making the meter continuous in its operation.

New Orleans Railway & Light Company Offers Prizes for Business-Producing Leads

To encourage those employees not connected with the Commercial Department to assist in sales, the New Orleans Railway & Light Company has offered prizes for the largest number of business-producing leads turned in during the months of September, October and November. The prizes are as follows:

First prize; minimum of 40 business-producing leads, $15.

Second prize; minimum of 30 business-producing leads, $10.

Third prize, minimum of 20 business-producing leads, $5.

Every employee desiring to enter this competition will be furnished a pocket memorandum book in which each page is numbered and detachable. The employee is asked to carry this book with him on all occasions, and put down anything that he sees that is likely to prove of interest to the company, either in the way of possible new business, defective service, or any suggestion with regard to development.

These memoranda will be turned in to the Commercial Department, where a record will be kept of every lead and the business resulting. At the end of the three months specified the employees whose leads have resulted in the greatest advantage to the company will receive prizes mentioned above.

Cards Point Out Advantages of Gas

The Boston Consolidated Gas Company has issued a series of five discussions on gas equipment, four of them treating of equipment in the "Ideal Home," and one on "Store and Factory Equipment." The talks are printed on white cards, 4 by 6 in., and are distributed by solicitors on their rounds, and supplied at the company's offices.

Under the head of Modern Gas Lighting, the company points out that the cost of gas lighting is only about one-third the cost of electric lighting with Mazda lamps. In addition, the light is superior for reading and general purposes. These are points which house builders and planners would do well to remember.

The use of gas for fuel is too well recognized to need reiteration, while the newer developments, for water heating, steam radiation, garbage incineration and power, are pointed out clearly, their advantages being concisely set forth in clear language.

It is pointed out that there are over 1,000 uses for gas, among them being gas mantles, laundry iron heaters, wash-boilers, clothes-driers, toasters, flatirons and nursery burners. Appliances in process of perfection are the iceless refrigerator and the vacuum cleaner, both gas operated.

In the card entitled "Gas Bills and Investigation of Local Conditions," the Boston company offers to help customers who are puzzled over meter variations, investigating possibilties of leakage or waste. The company wishes every customer to get the most benefit out of the gas used, and will co-operate in every way to that end.

Domestic Preparedness

The Standard Gas Light Company, of New York City, has taken advantage of the preparedness talk in the papers and magazines and installed a timely window exploiting the use of gas. Four tall columns are shown, covered with marbled paper, giving them the appearance of marble pillars. A crosspiece extends across the middle columns, forming an arch, and on this is printed in gilt letters: "Freedom from Drudgery." Streamers of red, white and blue bunting, are drawn back from the top, bottom and sides of the pillars to form the frustum of a cone, and at the small end of this frustum—four feet back—is placed a gas range. In front of one of the end pillars is a gas fired steam radiator, and in front of the other a gas fireless cooker, behind each being a flag-surmounted shield. In front of the central pillars are little tubular water heaters, mounted on blocks of wood to resemble cannons. A large sign says:

IF YOU BELIEVE IN PREPAREDNESS
YOU WILL CERTAINLY USE GAS—THE CLEANEST AND MOST ECONOMICAL FUEL FOR HEATING AND LIGHTING

A smaller card in front, where it can be plainly read, yet at one side so as not to detract from the symmetry of the window display, gives the price of each of the gas appliances so attractively exhibited.

The Consumer From a New Angle

Frank Lund, of the Commercial Department of the New Orleans Railway & Light Company Reminds Gas Men of the Evident, But Often Forgotten Fact, That it is the Consumer Who Pays the Salaries and Dividends of the Company

The consumer is, to a certain extent, coming into his own in the attentions paid him by the various utilities serving his needs. We have had him described to us, in his many phases, so effectually, that we have almost attained a half-way knowledge of his characteristics, and have learned that he is not so different from the rest of us in his likes and dislikes as we had imagined he was. Frank Lund, of the Commercial Department of the New Orleans Railway & Light Company, presents him to us from a new angle. According to Mr. Lund:

The consumer is to a gas company what a customer is to an ordinary store. He is the one who purchases the articles laid in stock for sale. With the gas company, he is the one who purchases the various appliances for gas and heat, and who uses gas through these various articles—particularly is he profitable to the company by reason of gas consumption.

As the sale of the gas consuming devices would not be of much value to the company unless the appliances were used, the consumer is the one who is the money maker for the company.

The profit derived from the sale of appliances and the gas is furnished by him. The dividends for the stockholders are made possible by his custom. The persons employed in the different departments are entirely dependent upon his consumption of gas for their daily wages.

Absolutely No Reason for Poor Service and Treatment

Other business houses are adopting new methods and ways to please their customers, and why should not a public utility company do the same? There is absolutely no reason for poor service and treatment.

Every effort should be made to conciliate, and make friendly relations between the company and consumer. It never hurts either the individual or the representative of the company to be courteous at all times.

Every reasonable complaint of a consumer should receive prompt and careful attention.

We must remember that the consumer knows little or nothing of our business—he only knows what he wishes to have done, and how much he has to pay for it—and if his request cannot be complied with, he should be made acquainted, in a gentlemanly manner, as to how it might be done.

Should Receive All the Courtesy and Attention it is Possible to Give

The consumer should receive all the courtesy and attention it is possible to give.

We should remedy any defect in our service gladly, and cheerfully, making it our earnest endeavor to comply with his desires so that the number of defects to remedy shall be reduced to a minimum.

A misrepresented order, promises of various characters made merely to get the order, incomplete or unsatisfactory work, and many other things which might be eliminated, tend to make the consumer out of sweet accord, and must of necessity create an antagonistic feeling. This should not happen and could be eliminated.

Compensation for Injuries Sustained in "Horseplay" During Working Hours Refused

Employees injured while engaged in "horse play" during hours of employment cannot be considered as coming under the workmen's compensation act in Pennsylvania, according to a decision just handed down by the Compensation Board, in the case of the Pressed Steel Car Company and Franciska Tomosoka, an employee. The decision sustains the referee in the Pittsburgh district, who refused to award damages to Tomosoka's heirs. He and a fellow employee were cooling themselves with a compressed air hose, and Tomosoka's death ensued.

The Great Mistake in the Distribution Systems of Some Cities Has Been Lack of Foresight

P. S. Lamb, Superintendent of the Mains and Service Department of the Ottawa Gas Company, Discusses Distribution Problems—Advocates Laying Main on Each Side of Streets Where Car Tracks Are Laid

"The great mistake in the distribution systems of some cities has been lack of foresight," asserted P. S. Lamb, superintendent of the mains and service department of the Ottawa Gas Company, in his paper on "Some Wrinkles on Distribution," presented before the Canadian Gas Association at its annual meeting held in Quebec, Aug. 16-17.

Before commencing to lay mains, there are certain preliminaries to be carried out, if the work is to be done expeditiously. First of all, a survey of the suggested route has to be made. After the route has finally been decided upon, the size of the main to be laid is one of the most important factors. A study of the district, what it is likely to be in twenty years, or whether, in a few years, a trunk main might be wanted, is a very necessary part of the work.

It is very essential that a complete survey of levels be taken so provision may be made for all necessary drips. It is prudent to allow a little margin under this head, owing to the possibility of having to deviate, later, to avoid some obstacle, not foreseen during the survey.

It is convenient to have a block or more opened up ahead, as this gives time to get around any obstacle which may appear; one of the most important being connections to cross streets, which in every case should come on a level, if possible, with the main under construction, if connections are to be made.

Cast Iron Pipes Should Have Greater Fall Than Steel

It is quite safe to lay steel pipes with a fall of two inches, in one hundred feet, where the streets are practically level, but with cast iron pipes, a little more is preferable, as they are shorter, have more joints, and not so smooth a surface.

Should a main, through the carelessness of the main-layer, or lack of efficient oversight, be laid with the fall in the wrong direction, that is to say, away from the drip, or should it become that way through settlement, the main will in the course of time, as the condensation collects, become water-logged. The supply becomes gradually impeded, until, if the amount of fall in the wrong direction, exceeds the diameter of the pipe, the flow of gas is stopped. In such a case, the only alternative is to find the place, and put in a drip where the water has gathered. Such mains are sometimes the source of considerable trouble through condensation collecting and causing oscillation in the supply, before being shut off. The importance of regular and systematic examination, and periodical clearing out of all drips, cannot be over-estimated, as, if any are missed or forgotten, trouble, inconvenience, and loss, will ensue, through the stoppage of the supply. A list of all drips, with particulars of their exact position, should be retained, so that in the event of the regular drip man being off for any reason, another man can be promptly put in his place, or in case drips are covered up by street repairing, or snow storms, they can easily be found.

Durability of Cast Iron Pipe

In regard to the various claims of cast iron and steel pipe, Mr. Lamb expressed himself as favoring steel for diameters under 12 in. for the following reasons:

Steel pipe, being lighter, and unbreakable, is more easily handled, requiring less care. Every pipe unloaded, or placed in a trench, means twenty feet as against twelve feet of cast iron pipe, and one joint instead of two. Another feature, in favor of steel pipe, is that in making service connections; if a service man bores the hole a little too large, it can always be caulked up, but in a cast iron pipe, if a mistake is made in that respect, the only alternative is to bore a still larger hole, and reduce it by a fitting to the size of the service being installed.

Since the introduction of lap-welded steel pipe, the leakage has been reduced to a minimum, but with the butt-welded pipe, split ends are very common; sometimes pipes split the whole length have been encountered. Before screwing the pipes together, threads and buckles should all be painted with thick red, and white lead, mixed about two parts red to one white, which makes a more elastic paste than all red lead, and prevents drying too hard. In some districts owing to the demand for gas having outgrown their capacity, cast iron mains have been lifted, which had been laid forty years, and relaid elsewhere, and they appeared as good as new. One of the disadvantages of cast iron pipes is breaking, where services have been connected to them, or where a little settlement has occurred. They are also more susceptible to leakage, being shorter in length, and having therefore more joints. Also, there have been many instances of their being broken by blasting operations.

Position of Mains in Streets Having Car Tracks

In regard to the position of mains, in streets where car tracks are laid, he expressed the opinion that all such streets should have a main on both sides, one main being used for feed, while the other need only be large enough to amply supply the other side of the street, through being fed from the feed pipe on the opposite side of the street, at convenient places. Although this would, in some streets, involve an extra initial expenditure, it would be money well spent. The expense of laying long services across the street would be avoided, and crossing under car rails abolished. No doubt this is the cause of electrolysis into the distributing system.

There is little doubt that the principal cause of this trouble is stray current from street car rails. With a main on each side of the street, this would be almost entirely eliminated. Some pipes would have to cross under the rails, but they could be covered with a non-conductor; this would do away with much of the trouble.

Nearly all frozen services are long ones which pass beneath the car tracks; as the frost goes down much deeper where streets are always bare. Besides the longer a service is, the nearer it comes to the surface, as services require much more fall than mains, owing to their greater chance of sagging, and becoming water-logged.

In residential streets, containing boulevards, and car tracks, all gas mains should be located close to the sidewalk, and inside the surface water-gratings, so that all service connections could be made without interfering with the roadway, in any way. All connections could then be made inside the walk.

This would do away with stubbing, which is one of the most expensive items in distribution, because it is impossible to determine the proper size of pipe required, except where houses are already built; and then, not always, as many houses are later converted into apartments which call for larger services. If these buildings should be across the street from the main, two or three cuts in the pavement are necessary. Mains located close to the sidewalk would be a saving in many ways, leaks could be located by punching in the street, and then, the digging could be performed inside, and beneath, the sidewalk, instead of having to cut the pavement to get at the pipe.

Cost of Materials Used in Manufactured Products $14,368,089,000 in 1914

The cost of materials used for manufactured products in the United States was $14,368,089,000 in 1914, as against $12,142,791,000 in 1909, an increase of $2,225,298,000, or 18.3 per cent, according to figures compiled by the U. S. Bureau of Census. The average cost of materials per establishment was approximately $52,000 in 1914, and $45,000 in 1909. In addition to the component materials which enter into the products of the establishment for the census year there are included the cost of fuel, mill supplies, and rent of power and heat. The cost of materials, however, does not include unused materials and supplies bought either for speculation or for use during a subsequent period.

Fifty Per Cent of Customers Obtained Through New Bangor Gas Company Extensions Had Houses Piped for Lights

All Gas Fixtures Sold Equipped With Mantle Lights—Majority of Ranges Sold of Cabinet Type—Prospects Are That During Next Year Nearly as Much More New Business Will Be Obtained As Was Obtained This Year

One hundred and fifty consumers were obtained on the first canvass in the South Brewer district, in which the Bangor Gas Light Company recently completed a 2½-mile extension. Fifty per cent of the houses were piped for lights, and all gas fixtures sold were equipped with mantle lights. Two-thirds of the gas ranges sold were of the cabinet type. About two miles of the extension were laid with 6-in. cast iron pipe, and the balance on the side streets was of 3-in. and 4-in. wrought iron pipe.

The people of South Brewer have given evidence of considerable satisfaction in having gas, and since the completion of the main extension, several back orders have already been received. The company has good reason to believe that during the next year nearly as much more new business will be put on as was obtained in the present year.

This journal is indebted to O. A. Merchant, Jr., manager of the Bangor Gas Light Company for the foregoing information.

Saving the Gas Bills

The Providence Gas Company, of Providence, R. I., has a display that speaks for itself, and attracts the attention of all thrifty householders. Two gas jets are shown, one with open burner, the other with a fitted top. Attached to each is a meter, with a dial, which turns continually, showing the amount of gas consumed by each. Between them is a card:

THE DIAL TELLS THE STORY

THE REFLEX LIGHT BURNS ONLY ONE-THIRD AS MUCH GAS AS THE OPEN JET. JUDGE FOR YOURSELF WHICH GIVES THE MOST LIGHT

Another card, going more into details, advises:

WE SELL REFLEX AMBER LIGHTS
$2.25 INSTALLED
PAYABLE IN THREE EQUAL PAYMENTS ON YOUR MONTHLY GAS BILLS

In the background are gas heaters, and asbestos gas fire logs.

Electric Iron One of Greatest Fire Hazards Among Electrical Appliances of Modern Household

It is a known fact that the electric iron is one of the greatest fire hazards that are to be found among the many electrical appliances of the modern householder. The public should as a consequence bear the fact in mind and use this wonderful little time saver and modern convenience with the proper precaution of turning the switch when its use is over.—*Journal of Electricity, Power and Gas.*

Seven Wonders of the World

The man who will work without being watched.

A SALESMAN who thinks that perhaps the quality of the material may have something to do with his making those large contracts.

A STENOGRAPHER who knows punctuation, and will look in the dictionary when she is uncertain about the spelling.

A PURCHASING AGENT who doesn't think he does you a favor when he asks you to quote.

A SALES MANAGER who doesn't think he pays the old man's salary.

A NEW SUPERINTENDENT who will wait a week before installing a much better system than his predecessors.

A boss who acts as if he wasn't.—*The Fra.*

Ottawa Company Makes Big Saving in Pavement Repair Costs

Since 1907 the Ottawa (Canada) Gas Company has been endeavoring to cut down its pavement repair costs. P. S. Lamb, superintendent of the Mains and Service Department of the company, in a paper presented before the Canadian Gas Association at its recent annual convention, describes the situation as follows:

"Cutting pavements with us has been a very expensive item. Since 1907, we have been trying continually to reduce this yearly expenditure. In 1907 we had 52 miles of mains and 5,000 services, with 10 miles of paved streets. That year it cost the company over $2,000 for pavement repairs alone, chargeable to the account of cuts made to repair leaks.

"In 1916 we have 126 miles of gas mains, 14,500 services, and 600 stubs, with 54 miles of paved streets. We have to date, this year, made seven cuts in the pavement for leaks. These cuts average about a square yard each. We now repair all our cuts at a small cost.

"When cutting pavement, we first take off the asphalt, lay it to one side, then take out the concrete, and lay it out of the way. When the work of repairing has been finished, the hole is filled up again, tamping everything back as before.

"We then mix the old concrete with about two bags of cement, adding a little sand.

"After this has been put back, we mix what is left of the two bags of cement, with sand (mixing it up thoroughly), about three to one, and place it on the top of the concrete which we have put back. Then we put on the asphalt, tamping it level, by using under the tamper a piece of plank long enough to catch the edge of the firm pavement. This piece of board keeps it to the exact level, and all cement that comes up around the edge of the cut is then leveled off, which completes the work. This is protected for 24 hours by a trestle, after which, it takes a keen eye to detect the cut. The cost of this work would be as follows:

2 bags of cement at 60c. each	$1.20
2 men for one hour, at 30c. per hour each	.60
Total	$1.80

"As the average cut is about one square yard, or an area of nine square feet, this would be exactly twenty cents per square foot."

Massachusetts Gas Companies Have Successful Combination Offer

The Arlington & Lexington Gas Companies in Massachusetts recently held a 10-day combination sale of a cabinet gas range, ironing board, flat iron, junior light and bracket; all for $25. This offer was especially attractive to housewives during the early hot spell, and a large number of customers in the high-class residential suburbs of Boston took advantage of it.

Richmond Gas Plant Operates at a Loss

A report filed with the Indiana Public Utilities Commission by the Richmond Light, Heat & Power Company, shows that the company's gas utility was operated during the fiscal year ending July 1, at a loss of $36,000.

N. H. Johnson, states that during the past month less gas was sold by the company than any other month in its history, a total of only 15,000,000 cu. ft.

The statement also shows that 115 more meter removals occurred during the year than meter installations.

LOSSES PAID BY WORKMEN'S COMPENSATION INSURANCE COMPANIES LAST YEAR EXCEEDED AVERAGE FOR COUNTRY

Losses paid by workmen's compensation insurance companies in Wisconsin in the year ended June 30 amounted to more than one-half of the premiums received, according to the annual report issued by the insurance commissioner of Wisconsin. The loss ratio of the entire country is 46.1 per cent. In Wisconsin the total amount paid as premiums for the period was $2,273,298, and losses paid were $1,224,616, a loss ratio of 52.9 per cent.

New Buildings and Equipment Added to Ceramic Engineering Department of Illinois University

The department of ceramic engineering of the University of Illinois will mark the beginning of the new college year in September by offering unusual facilities to those interested in the clay-working industries. Ceramic engineering, broadly defined, covers the science and practice of cement mills, of tile factories and brick yards, of terra cotta mills, of porcelain factories including those making tableware and electrical insulating materials, and of glass works. The field is broad and rapidly developing. Conditions imposed by the European war are prompting American manufacturers to extend their undertakings and have created an unprecedented demand for men who can lead, and for facts that will guide. The university has anticipated this demand. It is prepared to train men, through the medium of a four-year college course, in the scientific and practical aspects of the industry, and to afford advanced students exceptional opportunities for the conduct of research.

The university has developed a strong organization of men constituting the staff of the department, and it has erected and equipped, at a cost of nearly a quarter of a million dollars, a series of buildings especially designed for such work.

The buildings and equipment, which have recently been made available for the work of the staff and students of the department, include a kiln-house equipped with batteries of oil-fired and coal-fired kilns and with the heavier machinery for preparing clays, and a main building occupied as offices, recitation rooms and laboratories.

Pushing the Sale of Gas Irons

A catchy display, that called attention very widely to the use of gas irons, was recently installed by the Detroit Gas Company, of Detroit, Mich. It was floored with heavy blue paper, and had a lattice background painted a brilliant blue. In it were two heaps of old fashioned flat irons of all descriptions, and in the centre, on a pedestal a set of bright gas irons. Suspended from the ceiling above the gas irons was a large card:

EXCHANGE YOUR OLD IRON FOR A NEW ONE
BRING IN YOUR OLD IRON AND 25c AND TAKE HOME A NEW GAS IRON. PAY THE BALANCE OF $3.00 IN THREE WEEKLY INSTALLMENTS

Another sign said:

IRON IN A COOL KITCHEN
THE CHEAPEST AND MOST COMFORTABLE WAY IS WITH A GAS IRON. THREE HOURS IRONING FOR ONE CENT

Another window was fitted up as a portion of a kitchen, with a gas range on which were several kettles and pans. A card here advised:

SPEND LESS OF YOUR TIME IN THE KITCHEN
COOK WITH A GAS RANGE AND BE COOL DURING THE TIME YOU DO SPEND THERE

The Syracuse Lighting Company, of Syracuse, N. Y., recently took a full page space in the local papers in which to advertise its gas iron and ranges. As an added incentive to purchase it offered a $2.00 ironing board free with every gas range installed during the month of August. Supplementing its newspaper advertisements it attracted much attention by its effective window displays. One of them showed a cool, sanitary kitchen, with tinted walls, linoleum flooring and white enameled furniture. At one side was a gas range, and at the other a couple of the advertised ironing boards, one folded, to show how compactly it would stow away; the other set up, covered with an ironing pad, with a gas iron at one end. A catchy sign read:

THIS IS A PORTABLE, COMPACT AND WELL SUPPORTED IRONING BOARD
IN FACT, IT WILL SUPPORT THE ENTIRE FAMILY IF YOU GET A GAS IRON AND KEEP IT BUSY

Another window showed a portion of a boudoir. Here was set up an ironing board, on which was a gas iron attached to a wall jet. On the board was a dainty lingerie waist, and a woman in afternoon dress was ironing. On the floor in front of the board were half a dozen boxes containing gas irons and a card above the wax figure advised:

KEEP COOL WHEN IRONING—USE GAS AND A GAS IRON

Demand Load Indicator Simple of Construction

J. B. McNary Describes Device Meter Manufacturers are Working on to Satisfy Large Consumers—Complaint Meter Mechanism Used with Additional Attachment

The question has been asked, "why do not the meter manufacturers give us something to help us satisfy our large consumers?" stated J. B. McNary, manager of the Canadian Meter Company, in his paper on "What is a Gas Meter?" presented at the annual meeting of the Canadian Gas Association, held in Quebec, Aug. 16-17. In taking up the question with a manufacturer it was learned that such a device is being worked upon. As described by Mr. NcNary it is constructed as follows:

DEMAND LOAD INDICATOR SET ON TOP OF ANY METER WITHOUT REMOVING OR DISTURBING CONNECTIONS

For the demand load indicator, complaint meter mechanism, made up in portable box with additional attachment, whereby the complaint mechanism or demand load indicator proper may be set on the top of any meter while in service without removing the meter or in any way disturbing the meter connections, is used. It is only necessary for the fitter to cut a small rectangular hole in the tin meter top, and then place the demand load indicator with the indicator lever dropped into the hole so cut.

The hole in the top of the meter is cut in such a position as to allow the lever on the demand load indicator to come in contact with the horizontal motion of the flag arm of the meter, and each movement of the flag arm will give a corresponding movement in the demand load indicator, with the result that the same record, with a little different principle of operation is obtained, as is obtained on the regular complaint meter.

The drop lever on the demand load indicator carries its gearing in a small box provided with a stuffing box, so that when this small box is soldered over the rectangular hole cut in the top of the meter, safety from any gas leakage coming out in the consumer's premises is assured.

INDICATORS SUPPLIED WITH DIFFERENT FORMS OF BASE BOXES

The demand load indicators are supplied with two different forms of base boxes, one box being adaptable where the indicator can be set down directly on top of the meter without any interference from service pipes running across the meter top.

The other type of base box for the demand load indicator is offset to allow the indicator to be shoved horizontally into position on top of the meter where it would not possible in any other manner to set it in position, due to service pipes crossing the top of the meter.

Who Am I?

I am more powerful than the combined armies of the world.

I have destroyed more men than all the wars of the nations.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over $300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike, the young and old, the strong and weak. Widows and orphans know me.

I loom up to such proportions that I cast my shadow over every field of labor, from the turning of the grindstone to the moving of every railroad train.

I massacre thousands of wage-earners in a year.

I lurk in unseen places, and do most of my work silently. You are warned against me, but you heed not.

I am relentless.

I am everywhere—in the home, on the streets, in the factory, at railroad crossings, and on the sea.

I bring sickness, degradation and death, and yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but take all.

I am your worst enemy.

I am CARELESSNESS.—*Wire and Pipe.*

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Does the Gas Man Appreciate His Own Talents?

In the course of our routine duties it is necessary that we read many technical papers prepared by gas men and read by them before various associations and societies. We have also read papers written by engineers in other fields of activity, which were prepared for similar purposes. In so doing we have been impressed with the fact, that, in one respect at least, the gas engineer has progressed beyond his more numerous brethren—that is, in the use of his native language.

As a general thing, all the editing the average gas man's manuscript requires to prepare it for publication is the crossing out of irrelevant or local references that were included orginally to give it a direct interest to the section wherein he expected to deliver his address. From what we have seen of papers prepared for presentation in other fields of engineering activity, we think the general adoption of this method on the part of their representative journals would be disastrous, to say the least.

The question arises, therefore, since the gas engineer has apparently succeeded in acquiring a greater facility in expressing his thoughts in writing, why is he so sparing in making use of this talent; why is it that he confines his literary efforts almost entirely to preparing an occasional paper to be presented before his association or to a brief description for the monthly bulletin of his company?

Many times the reason has been advanced that he is kept too busy in the discharge of the ordinary duties of his position. We admit that most of the time the average gas man is kept quite well occupied; that there is not much dead wood on the payroll of the modern gas company. But does not the electrical man also have his routine duties to perform; are not the companies which employ him just as interested in getting the maximum output from each individual on their payrolls? Yet the electrical man is, as a rule, a prolific contributor to the technical press. In the civil engineering field it is the same. There is not a more industrious worker, both physically and mentally, than the civil engineer, yet he contributes freely to the technical journals in his field.

These branches of the engineering profession require a larger number of men than does the gas industry. They have not had the advantages of personal contact and acquaintanceship that the gas man has had, or the opportunity of transmitting information by word of mouth. They realize that they must have some medium for the interchange of experiences. They have found this in the technical press.

When the obscure county surveyor in Iowa effects an economy by some new system of maintenance, he writes out a description of it and offers it for publication. His purpose in doing so is not so much to gain the few dollars that will be paid for the contribution or the mere satisfaction of seeing his name in print. He looks farther than this.

He offers the benefit of his own experience to his fellows in the expectation that, in return, they will give him the benefit of theirs.

We know quite well that the gas man is not generally selfish in assisting others in solving their problems. We are well aware that the engineers of large companies, in the ordinary course of the mail, receive many requests for advice and suggestions, and that the information is freely given.

But the gas field is growing larger and more divergent in its interests. Methods of exchanging technical knowledge that were adequate even a few years ago do not serve so well to-day, and will be hopelessly inadequate in a very few years.

Even under existing conditions the system in vogue is time-consuming and uneconomical.

The New York gas companies are at present being called upon to temporarily remove their mains and handle their supplies by other means during subway construction. Were the Philadelphia gas company, for instance, to ask them for information in regard to their work in this particular we are quite certain that the inquiry would be completely and painstakingly answered. The time of the chief engineers would undoubtedly be taken up in preparing the answer. The task would not be delegated to some subordinate.

Other cities besides Philadelphia are contemplating subways. It is quite conceivable that several inquiries on the same subject might be made, and would be answered.

This is duplication of effort, and duplication of effort is waste. One complete description of the methods used, published, say in the AMERICAN GAS LIGHT JOURNAL, would suffice for all. Further, it would reach several hundred other gas companies and thousands of readers.

The technical journal is the logical medium for the interchange of technical knowledge, either in the gas field or in any other.

Let the gas man consider carefully the facts as stated, and others that will present themselves to his mind, and he cannot but agree with us in this statement.

Let him arrive at this conclusion, and it is certain he will make more frequent use of the talent he undoubtedly possesses—the ability to express his thoughts in written English.

Gas Versus Oil for Industrial Fuel

Never more decisively has artificial gas proved its superiority over oil as an industrial fuel than it has in the hardening and tempering furnaces of the Eddystone Ammunition Corporation, at Eddystone, Pa., which were described on page 113, last week's issue. It is indeed gratifying to note that the proof does not lie in mere theory alone, but in results obtained in actual operation. Several of the advantages of gas over oil as an industrial fuel, as shown by the experiences at Eddystone, were given in the article, but there are still others.

Generally speaking, 600 British Thermal Unit gas at 50 cents per thousand cubic feet compares very favorably with 4 cent per gallon oil in a good many cases, using modern combustion systems in properly engineered and designed furnaces.

The advantages of gas burned in proper appliances have a real monetary value which is capable of proof. These apply to large and small propositions alike. Many of the smaller heating tasks have been and are being done with gas, but the large jobs present good opportunities as well.

Entering as it is, into a new era of expansion, the gas industry cannot afford to overlook any of the possibilities that exist. Constructive publicity is the life of any industry. For this reason alone the big jobs are worth the effort made in going after them. The greater the task the more spectacular the description, and, consequently, the greater the inducement for the newspaper writer to go after the story.

A few installations like this will go farther towards enlightening the public as to the vitality of the gas industry than even the most important improvement in the methods of manufacture.

Service

The human race has passed through the Stone Age, the Bronze Age, the Iron Age, the Steel Age and is now in the "Service" Age. Every really successful business man has discovered that true success is always built upon a foundation of service. It is probable that the emphasis electric light companies have placed upon their service has had as much as anything else to do with their rapid growth. It is customary for colleges to try to instill the service idea into the minds of the students. The present ideal in all walks of life is service.

When we sift the idea to the bottom; when we search for the final meaning of the word we find that it is simply this: Doing unto others as we would wish them to do unto us. In other words it is putting ourselves in the other man's place.

If a man is president of a gas company let him transform himself in imagination into the personality of a consumer. He writes a letter to the gas company complaining about a high bill. He receives the following reply. "We have tested your meter and it registers correctly. Pay your bill at once or we will shut off the service."

He writes the same letter to another company and receives a reply with the following paragraph in it.

"It is our object to keep our service as near perfection as possible. We, accordingly, are pleased to have anyone call to our attention any reason why it is not giving perfect satisfaction. For this reason, we thank you for calling our attention to the inconvenience you have experienced. We trust that you will co-operate with us in giving the matter a thorough investigation."

When this man returns to the personality of the gas-company president which method will he want to use in his company?

We enter a gas office and notice a gloomy counter labeled "Complaints." We enter another office, and, in a bright attractive corner, find a group of booths furnished with comfortable table and chairs. Over this corner there is a sign bearing the following words: "Department for the Improvement of Service. All Suggestions for the Bettering of our Service Welcomed."

Which system promises the better results?

Gas companies will find the service idea a very profitable one to study and investigate. The idea has already been worked out to a marked degree by a large candy concern in New York City. At this company's stores each purchaser is given a post card which requests him to report any cause of dissatisfaction. It also promises to refund the postage. In order to put this system into operation the concern had to spend thousands of dollars for special cash register equipment that would print the cards with the information necessary to identify the purchase.

In the modern business world there are many other examples of service. The more highly developed the idea, the more prosperous the concern.

Encouraging Employees to Save

The New Orleans Railway & Light Company, through its monthly house organ *Energy* is making a strong effort to lead its employees into the thrift habit. This is decidedly a step in the right direction.

The employee who is getting sufficient wages to live decently, and to put a little aside for the future, is a contented, and, consequently, an eager and industrious worker. The employee who throws away his wages as they come to him without getting any real value from them is, in general, a drone, giving to the company only such part of his energies as he absolutely must give in order to hold his position.

More strikes for increased wages have been caused by the discontent of the spendthrift employee, who was really getting a good-living wage, but who had no sense of the value of money and who consequently had little to show for it, than have ever been caused by men who were really working at an inadequate wage.

A Real Loss with which the Gas Industry is Threatened

Standing as it does on the threshold of a great era of expansion, the gas industry is threatened with a real loss—the loss of that close bond of friendship and personal acquaintance that has so long distinguished it from other interests. Where, in the electrical, the mining, the civil and other fields of engineering activity, is there to be found that degree of good will and helpfulness to each other that exists among gas men?

But this distinguished feature, which has endured through the development of such huge undertakings as the Consolidated Gas Company of New York City, and the People's Gas Light & Coke Company of Chicago, is seriously threatened. Gas will be produced by different methods and on a more colossal scale in the future. That from by-product coke ovens will form a large part of the annual total. It will be used for countless purposes unknown in the past. In greater numbers than ever before new blood will be attracted to a field that offers so bright a future.

The loss of the gas field's distinguishing feature would be a real calamity. It may be impossible, despite the most earnest efforts, to avert it, but such efforts should, nevertheless, be made.

The responsibility of the associations and societies, and of the journals of the industry, in this respect, are great. No effort should be spared to keep up the degree of personal friendship and good will to each other that exists to-day in the gas field. New gas men should be made acquainted with those who have been affiliated with gas activities for years. They should be made familiar with the histories of the present big men of the industry, who have contributed so largely to its present splendid state of development. The veterans of the gas business should likewise be made familiar with the new names that are coming into prominence.

Co-operation has become the cornerstone of the big business of the present day. With the general good-will towards each other that still exists in its ranks the gas industry is equipped to carry out the co-operative principle to the highest degree.

Publications

Proceedings of the International Gas Congress at San Francisco:—Cloth bound book; 648 pages; illustrated. Contains account of sessions of the congress held at San Francisco, Sept. 27 to Oct. 2, 1915, and of International Gas Congress Day at the Panama-Pacific Exposition, names and photographs of officers, and names of members in attendance. The text and discussions of the following papers are published in the volume:

THE HISTORY OF THE DEVELOPMENT OF WATER GAS, by O. B. EVANS.
BLUE-WATER GAS AND DEEP-FUEL COMBUSTION, by Arthur G. GLASGOW.
THE SUBSTITUTION OF HEATING VALUE FOR CANDLE-POWER AS A STANDARD FOR GAS QUALITY, by R. S. MCBRIDE.
GAS STREET LIGHTING, by GEORGE S. BARROWS.
OFFICE AND STORE LIGHTING BY GAS, by THOMAS SCOFIELD and O. H. FOGG.
SEMI-PUBLIC LIGHTING, by T. J. LITLE, JR.
INDUSTRIAL LIGHTING, by ROBERT FF. PIERCE.
BUOY AND CAR LIGHTING, by GEORGE E. HULSE.
COMMERCIAL POLICIES, by C. WILLING HARE.
PUBLIC RELATIONS, by W. M. CRANE.
OFFICE MANAGEMENT, by C. N. STANNARD.
ORDERS AND COMPLAINTS, by W. J. CLARK.
ACCOUNTING, by P. S. YOUNG.
DOMESTIC LIGHTING, by J. D. SHATTUCK.
COMMERCIAL LIGHTING, by E. M. COLQUHOUN.
DOMESTIC FUEL, by R. E. SLADE.
INDUSTRIAL FUEL, by F. W. FRUEAUFF.
MODERN CARBONIZING SYSTEMS IN AMERICA, by ROBERT A. CARTER, JR.
BRITISH PRACTICE IN THE CONDENSATION, WASHING AND SCRUBBING OF COAL GAS, by DR. W. B. DAVIDSON.
BRITISH PRACTICE IN THE PURIFICATION OF COAL GAS, by J. FERGUSON BELL.
THE PRESENT PRACTICE OF GAS DISTRIBUTION BY BRITISH UNDERTAKINGS, by WALTER HOLE.
PRESENT PRACTICE IN THE SALE OF GAS IN THE UNITED KINGDOM, by F. W. GOODENOUGH.

Illinois Gas Association, 1916 Proceedings:—Cloth bound book; 261 pages. Contains names of officers and directors for year ending March, 1917, of members of committees, and of officers and directors and committee members whose terms ended in 1916, and of new members admitted; also the president's address and discussion, the reports of the public relations committee, of the committee on affiliation, of that on gas engineering education and that of the committee on the use of meter shelves. The volume contains the text and discussions of the following papers presented to the association:

CONSTRUCTIVE ADVERTISING, by J. W. LANSLEY.
UTILIZATION OF GAS OIL, by R. C. DOWNING.
DISPOSAL OF GAS HOUSE WASTES, by PAUL HANSEN.
GRATUITOUS WORK, by A. L. TOSSELL.
EFFICIENT USE OF GAS, by W. H. FORBES.
STORES ACCOUNTING, by W. A. SAUER.
INDUSTRIAL WELFARE WORK, by S. H. MOORE.
SALESMEN AND HOUSE RECORD CARDS, by E. D. V. DICKEY.
FUNCTIONS OF TRADE JOURNALS, by MILT SAUL.
BUNSEN GAS BURNER DESIGN, by G. C. CARNAHAN.

Indiana Gas Association, 1916 Proceedings:—Cloth bound book; 141 pages; illustrated. Contains names of officers and directors, of those who have applied for membership and of the present members of the association. Also report of last annual convention, committee reports, etc. The text and discussions of the following papers are published:

FINANCING PUBLIC UTILITIES UNDER STATE CONTROL AND SERVICE RATE AND RATE OF RETURN, by CHESTER P. WILSON, president, Interstate Public Service Company, Indianapolis, Ind.
HOW CAN GAS COMPANIES SECURE MORE WHOLESALE BUSINESS, by CHARLES A. MUNROE, vice-president, Public Service Company of Northern Illinois, Chicago, Ill.
CLASSIFICATION AND ANALYSIS OF GAS ACCOUNTS, by V. V. SMITH, chief clerk, Citizens Gas Company, Indianapolis, Ind.
A COMPARISON OF MODERN COAL CARBONIZATION PLANTS, by VERNON BAKER, chief engineer, Russell Engineering Company, St. Louis, Mo.
ADVERTISING AND PUBLICITY, by E. J. BURKE, Commercial Manager, Citizens Gas Company, Indianapolis, Ind.

Public Utility Companies in which the Standard Gas & Electric Company Owns Investments:—Illustrated booklet issued by H. M. Byllesby & Company, engineers and managers. Describes various properties of the company and gives data in regard to cities they serve.

House Heating with Gas in Baltimore:—Illustrated booklet issued by the Consolidated Gas, Electric Light & Power Company of Baltimore. Starts off with the pithy statement that: "The secondary rate of 35 cents net for excess domestic consumption places cheaper gas at the disposal of Baltimore consumers. The more gas used, the less its cost to the consumer," and alludes to the extensive tests and investigations—described on page 58 of the July 24 issue of the AMERICAN GAS LIGHT JOURNAL—that were made in order to obtain reliable, complete and accurate information on every phase of house heating. Describes different methods of house heating by gas and discusses relative costs. Discusses individual gas radiators and their efficiency. Explains, in a language easily comprehensible to the layman, thermostatic control and its convenience. Concludes with the following admonition and reminder: "Remember that house heating with gas is neither new, untried nor in the experimental stage. In other parts of this country thousands of houses have been heated for years with gas, but Baltimore is the first city to have a rate low enough to make artificial gas available for heating homes at a moderate cost."

Efficiency Instrument Bulletins:—Series of bulletins issued by the Scientific Materials Company of Pittsburgh, in loose leaf, flexible-backed binder. Describes "Scimatco" spring-type pressure and temperature measuregraphs and indicators, and hydrostatic type pressure indicators, draft indicators, pressure measuregraphs and draft measuregraphs.

The Thwing Instrument Company, of 445 North Fifth Street, Philadelphia, has recently published a book on pyrometers that offers many new and interesting suggestions of value to owners and managers of plants where the temperature of kilns, ovens, furnaces and retorts is an important factor in the process of manufacture. The book will be furnished anyone interested along such lines upon request to the company.

A System of Accounts for Retail Merchants:—Booklet; 19 pages; illustrated. Issued by Federal Trade Commission, Washington, D. C. An outline of a simple system of accounts for the class indicated in the title.

Fundamentals of a Cost System for Manufacturers:— Booklet; 31 pages; illustrated by diagrams. Issued by Federal Trade Commission, Washington, D. C. Shows briefly the importance of accurate manufacturing costs and the fundamental principles underlying them.

Overhead Carrying Devices:—Catalog 88 of the New Jersey Foundry & Machine Company, of 90 West Street, New York City. Forty-eight pages; especially well illustrated. Describes company's I-Beam trolleys and trolley hoists, electric hoists, grab bucket hoists, traveling cranes, blocks, screw hoist, chain hoist, portable 2-speed crane hoist, gantry crane, continuous trolley systems, portable elevator, circular, jib, wall, or post, underbraced jib, transfer, underhung, hand-push, and cantilever traveling cranes; also traveling cantilever, automatic trolley stop, cylinder air hoists, motor air hoists, slings and tongs, derricks, locomotives and other products.

Connersville Blower Company, Bulletin 13 A:—Four-page folder; illustrated. Describes Victor gas pump, or booster. Issued free on request by the Connersville Blower Company, manufacturer of rotary positive pressure blowers, gas exhausters and pumps, of Connersville, Ind.

Foxboro Company, Bulletin 104:—Booklet; 56 pages; illustrated. This bulletin describes clearly the actuating principles, and the improvements which have been embodied in the design of the company's indicating and recording thermometers. It is arranged so as to make it as easy as possible for a prospective customer to pick out a thermometer to meet his requirements. The bulletin is ready for distribution and will be furnished on request to the Foxboro Company, of Foxboro, Mass.

Special English Correspondence.

Monthly Letter from Norton H. Humphrys, Salisbury, England.

The Accounts of London Gas Companies in Wartime—A Possible New Outlet for Town Gas—New Officers of Gas Light & Coke Company of London, Following Death of Sir Corbett Woodall—Compressed Gas for Motor Vehicles

The publication of the accounts of the leading London gas companies, for the half-year ended June 30, within less than a month, and that under the strain of depleted staff due to wartime conditions, speaks highly as to the efficiency of systems that, under such manifest disadvantages, exhibit no signs of weakness; and as such, may be commended to the considerations of certain Government departments.

The accounts of the Gas Light & Coke Company, and of the South Metropolitan Gas Company, were passed for publication to the shareholders on June 20 and 26, respectively, and a very cursory perusal of the figures shows that efficiency is not confined to the accounting department.

In connection with the company first named, one's thoughts immediately turn to the great loss sustained by the death of Sir Corbet Woodall, who was an acceptable chairman at the half-yearly meetings for many years past, and whose ability and industry, as the governor of this large undertaking, have contributed largely towards the attainment of such a sound position, that it can successfully weather the storms that have been encountered since the coal strike of 1913.

John Miles succeeds Sir Corbet Woodall in the governor's chair, and D. Milne Watson, the general manager, takes a seat at the board, in the capacity of managing director.

In view of the numerous restrictions on the consumption of gas, to which I have had occasion to refer, during the last few months, it is remarkable that both concerns are able to report an increased consumption of gas, as compared with the corresponding period of 1915; especially so when we remember the extensive outdoor lighting, particularly in the west-end district of the metropolis, that is for the time being laid on the shelf. The uncertain supply and continual advances in the price of oil, the shortage of freightage, and a good market for coal residuals, have combined towards reducing the quantity of carburetted water gas manufactured, notwithstanding difficulties and high prices incidental to the supply of coal.

The general result has been, that the cost of raw material has gone up 40 per cent. The South Metropolitan Gas Company has never taken up the manufacture of carburetted water gas, so is not interested in the price of oil. With the help of a steadily maintained demand for gas, and good sales for residuals, both companies have been able to avoid a decrease in profits, although their advances on the selling price of gas have been far less than would have been warranted by the high cost of all kinds of materials.

The Gas Light & Coke Company has assisted matters in respect to coal supply, by the "purchase of several steamers," and the South Metropolitan Gas Company has affected, by the "acquisition of steam ships," a saving on the cost of coal, sufficient to warrant a reduction in the price of gas, of 2d. per 1,000 cu. ft., to take effect as from June 1. The shareholders, as well as the consumers, will welcome the reduction, as under the regulations of the sliding scale, it means a ¼ per cent increase of dividends.

When the present price of gas,—2s—8d per 1,000 cu. ft. and the reduction, are compared with the conditions prevalent in respect to the cost of other leading necessities of civilized existence, users of gas cannot fail to see that they have good reason to be grateful for the existing gas legislation, and to appreciate the fact that if the lines on which it is based were extended to cover other commodities, their pockets would be benefited to an important extent. There are few cases in which the rise in the price of gas, since the declaration of war, have exceeded 20 per cent, and as a rule the figure is much lower; yet the advance in the cost of household coal, one place with another, is more like 100 per cent, and colliery owners are clamoring for more.

A feeling, not only of indignation at the discreditable action concerned in utilizing public misfortunes as a means for increasing private profits, but of uncertainty as to the prospects for next winter, operates strongly in favor of increased consumption of gas, for all purposes that admit of its substitution for coal, and to that extent, gas companies are indebted to the rapacity of the coal owner, as when once adopted, the convenience and other special advantages secure a permanent retention.

The prevalent high prices for solid and liquid fuels, and the irregularity of supply, are responsible for directing the attention of commercial people to another possible use for coal gas, and that is as a fuel for motor vehicles, which is very satisfactory evidence of the fact that gas is now regarded by the public, not necessarily as cheaper, but as more reliable in the matter of supply, than coal or petroleum. And with all respect to our British Commercial Gas Association, a weakness in its very efficient organization is indicated, when we find outside people recommending new uses for gas. It is up to the association to forestall outsiders in this respect.

A writer in the *Journal of Commerce* carried out a series of experiments on compressed coal gas as a fuel for petrol engines on motor vehicles some years ago, and proved that it was economical, and called for no other alteration than the substitution of a combined gas and air valve and a gas containing cylinder, in place of the carburettor and petrol tank.

The difficulties encountered at that time were the supply of gas at a commercial price, the great weight of the cylinders required to carry a reasonably sufficient supply and the partial dissociation of the gas at high pressure.

The experiments were conducted with ordinary town gas, as supplied in cylinders by a compressed gas company, and the cost, including hire of the cylinders, was 5s—5d per 1,000 cu. ft.

If the gas company would install the necessary compressing plant at their works, they would be in a position to supply compressed gas at a special rate, because there would be no cost for distribution expenses, and the leakage factor would be eliminated. The weight of the cylinders is no longer a serious objection, as it was now possible to run a four-ton vehicle a distance of more than 20 miles on one charge. A gas wagon could make periodical stops for replenishment, in the same way as a steam wagon stopped to take up water, but its scope would be limited to the era covered by the charging stations.

It had been estimated that compressed gas at 3/—per 1,000 cu. ft. in the cylinders, would mean a saving of 2d. per mile, on a four-ton lorry, as compared with petrol. Gas can be now treated in such a manner, that dissociation is eliminated, up to a pressure of 120 atmospheres.

The *Commercial Motor* also gives prominent attention to the subject in the editorial columns by means of an article written by an expert, W. A. Tookey, and mentions that an important motor-bus undertaking in London, in conjunction with the South Metropolitan Gas Company, is determining the exact details incidental to the adoption of compressed gas on its vehicles. The cost of a battery of gas cylinders, for a three-ton carriage, may be £30 to £40, but this sum would be quickly recovered by the economy offered by gas as compared with the present prices of petrol, to say nothing of those that are likely to rule within a few months' time.

The gas companies of the United Kingdom have a wonderful chance at their disposal, concerned with potentialities that literally represent a colossal addition to the requirement for home-produced coal, with resulting production, not only of gas, but of coke and all the liquid residuals that are now so valuable. To give an illustration, a gas company supplying a district comprising 100,000

inhabitants, might be asked to meet the normal requirements of 200 commercial motors, which means an addition of 67,000,000 cu. ft. to the annual output of gas, necessitating the consumption of 6,000 tons more coal, and the additional production of perhaps 20,000 gal. of benzol. Gas companies have only to consider the cost of the gas in the holder, and they are asked to supply an article that costs them about 1/—per 1,000 cu. ft. exclusive of cost of compression, for anything between 2/—and 3/—according to quantity supplied and other local circumstances. The compression would have to be effected in successive stages, say three, and the final charge should be delivered to the customer at a pressure of 1,800 lb. per square inch. The present prices of petrol, and those that are likely to rule for an indefinite time, are such as to admit of good trading profits, both on the compressed gas, and on the additional yield of benzol.

All this looks very feasible, but the weak point in the argument is the paucity of information as to the cost of compression, which is the crux of the whole question. The estimate of 1/—per 1,000 cu. ft. as the cost of the gas in the holder, is much too low, at present prices of material and labor, for any gas works that is not situated close to the top of a coal mine. The difficulties in respect to freightage, instanced in a previous part of this letter, apply to nearly all gas undertakers in the south of England, and even after allowing for the additional profit secured by stripping from the gas every hydrocarbon except methane, which is apparently contemplated, 1s.—6d would be nearer the mark. The compression of gas up to 1,800 lb. per square inch, which exceeds anything yet attempted on the large scale, would be an elaborate operation calling for costly machinery and special skilled supervision. One could not leave an ordinary works foreman to deal with such high pressures. The scheme also includes either separate compressing plants in convenient parts of the district, which would necessitate distribution in the ordinary course, or arrangements for delivering charged cylinders to convenient distribution centres, and collection of empties, because customers working at say two miles distance would not expect that an integral part of every 20 miles' run would be a trip to the gas works. So the costs represented by distribution and leakage would not be entirely saved. The whole subject is interesting and worthy of the fullest practical investigation, as it involves so many novel points that estimates based to a large extent on theory only, are not reliable.

The British Commercial Gas Association is considering steps for bringing the matter before the attention of the members, and any information sent out should be accompanied with actual costs of a trial on a working scale.

Sydney F. Walker, of Bath, writing to the *Gas World*, goes rather more fully into detail, and expresses a favorable view of the scheme, but admits that the cost of compression would be "considerable." Taking the calorific value of petrol at 20,000 B. t. u. per lb. and the specific gravity of 0.72, a gal. would furnish 144,000 B. t. u. equivalent, at 9,000 per brake-horse-power, to approximately 16 brake-horse-power-hours.

Taking town gas at 500 B. t u. per cu. ft. (too low an estimate, as 550 to 600 would be nearer the mark, on the average throughout the country), 285 cu. ft. measured at atmospheric pressure, would be consumed in producing a similar quantity of power. The average motor car is usually allowed to require one gallon of petrol per 20 miles run, so the least quantity of gas that should be carried, to avoid unreasonably frequent stoppages for renewals, should be 1,400 cu. ft. at ordinary pressure. Compressed air at 1,000 lb. per square inch had been used for a long time in America, for the supply of locomotives worked by compressed air in mines, and the engines take in supplies as required at various points, just as the ordinary railway locomotive takes in water. Air had also been used in Durham coal mines for several years, at pressures up to 300 lb. per square inch. A reducing valve would be required at the outlet from the steel cylinder, but this presents no difficulty, and the use of compressed air or gas, is attended with a sudden lowering of the temperature, due to the expansion of the gas as it leaves the reservoir. This should present no difficulty with motor engines, except when starting, because the heat from the exhaust could be utilized, and the same might also be applied for increasing the power obtained per cubic feet of gas used, similarly to the way in which the power obtained from compressed air was increased by heating it at the point of consumption. The use of compressed gas as a substitute for petrol would enable the carburettor to be dispensed with, which would be a great advantage, as a large proportion of the troubles with petrol engines are due to this feature of the machine.

Premium Using Gas Companies Beginning to Use Miscellaneous Merchandise

Indianapolis Company Gives 42-Piece Set of Dishes, Binghampton Company Gives Kitchen Sets, and Mohawk Company Gives Indian Costumes Suitable for Boys and Girls

In the past, premium using public utility corporations have made the serious mistake of exclusively giving their own services or their own service consuming appurtenances as premiums. There is now apparent, however, a strong tendency on the part of gas companies particularly to use well recognized quality premium merchandise for premium purposes. This is a gratifying development and one that possesses great significance.

The Citizens Gas Company, of 47 South Pennsylvania Street, Indianapolis, Ind., gives free a 42-piece set of dishes with every cabinet gas range selling for $25 or over, which is purchased, within a certain set period. The dishes are of high-grade Puritan chinaware. In cash transactions the dishes and ranges are delivered at the same time. If the range is bought on the installment plan, the dishes are delivered after 40 per cent of the purchase price of the range has been paid. A sample set is kept on display at the office.

The Binghamton Gas Works, of Binghamton, N. Y., gave a 15-piece kitchen set free to every purchaser of a gas range during the month of July. The set consists of five knives, such as carving, meat, kitchen, etc., and a large carving fork, an automatic egg beater, cream whipper and mayonnaise mixer, a zig-zag mixing and batter spoon, a compound potato masher, fruit and vegetable crusher, a measuring and kitchen spoon, a griddle greaser, an egg boiler and egg server, a perforated strainer spoon, a flexible cake turner and chopping knife, a small size cream whip and egg beater, and an automatic one-hand mayonnaise mixer, egg beater, etc. These fifteen pieces are said to represent a value of $3.75.

The Mohawk Gas Company, of Schenectady, N. Y., held a one-week sale of copper coil gas water heaters. The usual price of these heaters installed is $17.50. During this week they were sold at $12.95. As a special inducement to the sale of these heaters a Mohawk Indian costume, complete from headdress to moccasins, was given with the sale of each heater. These costumes were for both boys and girls.

The man who sells gas ranges is a first cousin to the gas utility which sells gas ranges, and it is, therefore, appropriate to mention the fact that Langley's, of Waterbury, Conn., recently gave free a 26-piece silver table set with a sale aggregating $40 or over. Gas ranges were prominently mentioned in connection with the announcement of this premium plan, hence the utilities which sell appliances will quickly grasp the premium idea from the retailer who utilizes a premium plan of stimulating the sale of service consuming appliances. The Rhodes-Mahoney Furniture Company, of Chattanooga, Tenn., also sells gas ranges. With every gas range sold during a special sale a 15-piece white porcelain kitchen set was given.

Considering the fact that utilities were so long appreciating the value of the premium system, it must be conceded that they are making very encouraging progress now that they have begun to utilize the plan.—*Novelty News.*

Commends Gas Company on Manner in which it Leaves Streets Over Cuts

Under the caption "See the Difference" the *Salem News* comments on the manner in which the Salem Gas Light Company leaves the streets over cuts as follows:

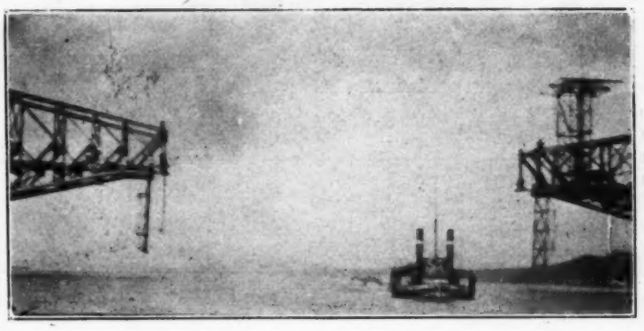
"The attention of the public is called to two places on Main Street showing the difference between the way the gas light company leaves the street after digging it up, and the commission of public works. The comparison is so great in favor of the private company, that it should make the blush of shame suffuse the chrome-tanned countenance of the commission, whose work on the streets of the town of Peabody, where they expend $40,000 or $50,000 a year, is money that is largely wasted."

News of the Gas Industry

Not a Hitch Intervenes to Mar the Proceedings of the Second Day's Session of the Canadian Gas Association

Last Four Papers on Program Read and Discussed During Morning Session—Afternoon Given Up to Visit to Shrine of St. Anne de Beaupre and Sightseeing Tour of Rare Interest—Banquet held at Kent House in Quebec

MR. BATTEN HOLDING CONVENTION MASCOT



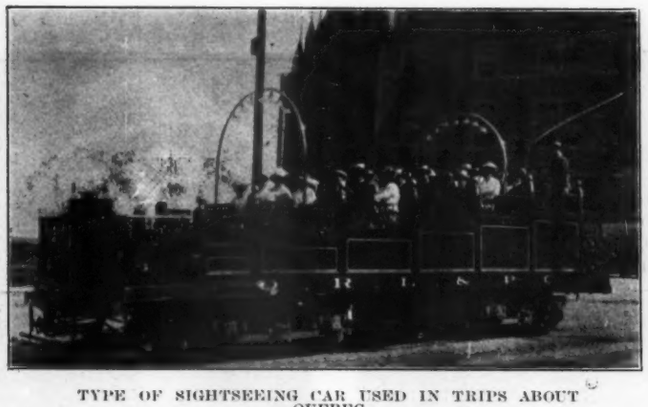
INSPECTION OF QUEBEC BRIDGE WAS AN INTERESTING EVENT TO MANY.

OLDEST MEMBER IN ATTENDANCE, W. WILLIAMS

W. L. HELLEWELL, J. V. LANDRETH AND HARRY P. DAINS

ARTHUR HEWITT

MONTOMORENCY FALLS VISITED BY PARTY



TYPE OF SIGHTSEEING CAR USED IN TRIPS ABOUT QUEBEC

J. B. McNARY

Not a hitch intervened to mar the proceedings of the second day's activities of the Canadian Gas Association, held in Quebec, August 17. The weather conditions were ideal for the purpose.

While the members were in session during the morning, forty or more ladies took advantage of the automobile trip around the city to points of interest not seen during the car trip of the previous day.

The last four papers on the program were read and discussed during the morning session. These were as follows:

"A Comparison of Modern Coal Carbonization Plants," by Vernon Baker of the Russell Engineering Co., St. Louis.

"The Relationship Between the Accounting and Operating Departments," by H. K. Tennant, Accountant, Quebec Railway Light & Power Company, Quebec.

CONVENTION EXCURSIONISTS PHOTOGRAPHED AT ST. ANNE DE BEAUPRE

"What is a Gas Meter?" by J. B. McNary, Canadian Meter Company, Hamilton, Ontario.

"Some Wrinkles on Distribution," by P. B. Lamb, of the Ottawa Gas Company.

Quite a number of members entered into the discussion of these papers, among them being: Messrs. Hewitt, Jeffries, Dion, Burnett, Young, Wallace, Knapp, Watson, King, Johnston, Gardner, Conroy, and others.

At the conclusion of the reading of the papers the proceedings were summed up by President Wallace, who thereupon called upon President-Elect J. P. King to take the chair. Mr. King thanked Mr. Wallace and the officers of the Quebec Railway, Light & Power Company for the great reception accorded the visitors at the convention. Mr. Wallace, on behalf of the company, stated that he appreciated the sentiments expressed by the visiting delegates, and hoped it would not be long before he would have an opportunity of seeing them all again. He also stated that great credit was due the new secretary for the manner in which he conducted the transportation problems of the many delegates, and for the campaign he put on to bring the many visitors to the convention.

H. L. SCHUTT

After luncheon the party was taken by special electric observation cars to the famous shrine of St. Anne de Beaupré, 21 miles from Quebec, and began a sightseeing tour of rare interest. After the inspection of these the party gathered into a group and was photographed.

On the return journey a stop was made at the Kent House, Montmorency Falls, Quebec, where a banquet was held. Many toasts were made and the affair was characterized by the manner in which those present enjoyed themselves. The homeward journey was made around 11:00 p. m.

The oldest member of the Canadian Gas Association in attendance at the convention was W. Williams of the Sarnia Ontario Gas Company.

In general, the meeting was very much of a family party. J. P. King, the new president, promises to liven up the association during the next season. It is conceded, however, that he will have to accomplish a great deal to surpass his predecessor.

PRESIDENT-ELECT J. P. KING, WITH MRS. KING AND SON

SECRETARY-TREASURER ALLEN AND RETIRING PRESIDENT WALLACE

Brooklyn Gas Company Upheld in Fight with City

Seventy-Five Cent Gas Law Held by Supreme Court Justice to be Unconstitutional, Insofar as it Sought to Abrogate Contract between City and Gas Company for Furnishing Gas for Street Lighting

Supreme Court Justice Crane, of Brooklyn, N. Y., in a decision handed down, Aug. 21, held that the so-called Seventy-five-Cent Gas Law, passed by the Legislature in 1905, is unconstitutional insofar as it sought to abrogate a contract between the city and the Kings County Lighting Company for furnishing gas for street lighting.

The decision sustained demurrers filed by the Kings County Lighting Company, to defenses set up by the city in its answer to a suit brought by the company to recover $110,979 for gas furnished for lighting the streets of the Thirtieth Ward, Brooklyn.

Justice Crane made it clear that his decision in no way questions the legislative right to regulate rates for gas furnished individual consumers and in no way prevents legislative regulation "for the public health or safety or for general welfare."

Newton, N. J., Gas Plant Sold

With but one bid offered the Newton Gas & Electric Company's plant was sold, Aug. 21, for $30,000, at sheriff's sale, to Albert H. Atterbury, of a New York law firm. The plant was sold on the foreclosure suit of the Hobart Trust Company, of Paterson, agent for the bondholders, who had a claim of $155,327.79, together with $2,278.14 interest charges against the company. The conditions of sale were signed by Frank Hills, and Mr. Atterbury, who gave a certified check for $5,000 to bind the bargain.

It is believed that the purchase by Mr. Atterbury, who represents the Guggenheim interests, will leave the plant in the same hands, although William L. Keplinger, who has been receiver of the company for about six years, will be discharged from his duties by the Court of Chancery. Previous to the receivership Mr. Keplinger was manager and superintendent of the company.

New Jersey Utility Commission Will Approve Consolidation of Gas Companies

The Board of Public Utility Commissioners of New Jersey announced Aug. 17, that it would approve the consolidation of the Freehold Gas Light Company, and Standard Gas Company, providing a capital issue of $59,000 is made to be given in exchange for the capital of the Freehold Company.

Societies and Associations

The Commercial Employees of the Brooklyn Union Gas Company, to the number of more than 200, held their annual outing at Witzel's Grove, Long Island, Aug. 12.

The American Gas Institute has selected the Congress Hotel as headquarters for the annual meeting to be held in Chicago, Oct. 18, 19 and 20. The hotel has ample capacity to accommodate the entire membership but it would be well to write and secure rooms at once. The rates are as follows:

Single rooms, with bath	$3.00 up
Double rooms, with bath	5.00 up
Single rooms, without bath	2.00 up
Double rooms, without bath	3.00 up

Front rooms command a view of the lake and long stretches of boulevard. Several large reception rooms have been set aside for the exclusive use of members during the convention.

Particluar attention has been given to arrangements for entertaining the lady visitors. The ladies of the reception committee will escort them in their automobiles to any places of interest or entertainment which they may be disposed to visit. A luncheon will be held for them at the South Shore Country Club, preceded by a drive through the South Side boulevards and parks. This club has recently been completed and is said to be the finest of its kind in the country. They are also invited to accompany the members to the plant of Sears, Roebuck & Company, where luncheon will be served, followed by a visit through the establishment. A theatre party will be held on the evening of the banquet, after which they will be given the opportunity of hearing the "after-dinner" speeches from the gallery of the Gold Room. Charles G. Dawes will act as toastmaster at the banquet, and Frank O. Lowden, Wm. J. Calhoun, Samuel Insull and J. Hamilton Lewis are included in the list of speakers. Tickets to the banquet are $10.00, which charge includes all other entertainments during the meeting. Papers and committee reports on the following subjects will be discussed:

Papers

Oils for Water Gas.
A By-Product Coke Plant.
A De-benzolizing Plant for Water Gas.
Purification of Water for Gas Works Purposes.
Gas Oil.
Removal of Sulphur from Spent Oxide.
Some Characteristics of Gas Oil.
Determination of Density of Dry Gases.
Gas Versus Electric Cooking.
Unit Costs in Distribution.
Industrial Gas Fuel Appliances.
Welded Mains.
House-heating by Gas.
Street Lighting.
Gas Ignition.
Chicago's Experience with a Separate Lighting Division.
Bulletin System.
Organization for Cost Reduction in the Consumers' Bookkeeping Department.
Cost Record on Appliance Installation.
Outline of Credit System.
Date for Rate Making.
Committee Reports.
Accrued Amortization.

Committee Reports

Carbonization.
Gas Works Auxiliaries.
Gas Works Standard Tests.
Refractory Materials.
Consumers' Meters.
Gas Housepiping.
Piping Large Buildings for Gas.
Distribution Standards.
Distribution.
Gas Fuel Appliances.
Classification of Gas Engineering.
Misleading Statements.
Nomenclature.

Among those who will present papers are: F. L. Weisser, W. H. Fulweiler, Dr. Rittman, E. J. Murphy, R. B. Harper, Piere Haynes, S. C. Bratton, A. A. Treadway, S. T. Wilson, Chas. Wilde, Messrs. Barrows and Winterstein, T. J. Litle, C. A. Luther, C. S. Ritter, F. L. Patterson, L. B. Lohmeyer, Robert Blair, John St. John, and H. M. Brundage.

The American Chemical Society will feature its meeting to be held in New York City, Sept. 25-30, by a symposium on occupational diseases conducted by Prof. Charles Baskerville, head of the department of chemistry of the College of the City of New York. The subject is interesting and important as well as full of surprises. Housemaid's knee, for instance, which for many years has served as a subject for humorous comment, proves to be a frequent malady of miners. The Statistician is abroad in this and other lands, and he brings the information that trades carried on in the presence of much dust show a high death rate from diseases of the lungs. Then comes the biologist who explains that dust is not only minute particles, but that the particles are usually surrounded by a watery envelope, and that clinging to this filament there may be micro-organisms. The medical authorities abroad declare that soot is a serious irritant, and that chimney-sweeps are especially subject to cancer because of it. Sawing certain kinds of wood has been found to produce irritation of the mucous membranes of the nose, throat and eyes. The makers of white lead have looked lead poisoning square in the face, and have found means to avoid it. Dr. Patterson of Philadelphia, devised an entirely reasonable, but somewhat unexpected treatment for it. He immerses the patient's hands in one tub of salt water and his feet in another, and then a pole of an electric battery is put into each of the tubs. The current is turned on, using the patient as a conductor, and it carries the lead that it finds on the way, out of him, through the salt solution and deposits it upon one of the electrodes. It has proved successful. Fatigue is an-

other subject that has been studied and reported on. Strain is declared to be more exhausting than work, and monotony of employment aggravates exhaustion. Fatigue seems to be a condition of the body in which the waste products of work are not carried off fast enough. In physiological laboratories animals have been fatigued by over-driving and then some of their blood has been injected into the veins of healthy animals. The healthy animals straightway showed the same symptoms of fatigue as those that had been over-worked. In rubber factories and elsewhere, when bi-sulphide of carbon is used, great care must be taken to avoid contamination of the air by its offensive fumes. Otherwise nervous troubles are likely to follow. There is bakers'-itch, grocers'-itch and sugar-refiners'-itch, all manifestations of exema, according to the materials handled. The question is likely to be asked why boards of health do not use chlorinated water for flushing the streets, especially in hot, dry weather. This was first proposed by Dr. Baskerville six or seven years ago, and there is no question but that its effect upon disease germs in the street dust would be beneficial to the public health. Since the New York water supply has been treated with chlorine, not a single case of typhoid fever has been traced to it as the cause. It is doubtful if any other satisfactory answer will be forthcoming than that the boards of health haven't got around to it yet. The symposium will consider the chemical trades, prophylaxis in chemical industry, diseases incidental to work in aniline and other coal tar products, cedar lumber, mines, explosives, and a general discussion by the leading authorities of the country. These will include Drs. W. Gilman Thompson, F. L. Hofman, J. L. Schereshewsky, G. P. Adamson, H. K. Benson, R. A. Lynott, Alice Hamilton and J. B. Andrews.

Personal Notes

JOHN FOSS has been appointed manager of the Twin State Gas Company at Berlin, N. H.

NEWTON D. ARNOLD, for over 35 years secretary-treasurer and general manager of the Rumford Chemical Company, and a director of the Providence, R. I., Gas Company, died recently at his summer residence at Weekabaug, R. I.

GEORGE P. FOWLER, at one time superintendent of the Salem, N. J., Gas Company, died recently in that city.

Construction Notes

NEWMAN, CAL.—C. S. S. Forney has applied to the State Railroad Commission for authority to install a gas system at Newman and to issue $22,000 in stock to pay for the installation.

NEWPORT, CAL.—Small extensions to distribution system are contemplated in this city.

TULARE, CAL.—The Central California Gas Company has asked authority of the Railroad Commission to install a municipal street lighting system in Tulare, and to issue sufficient stock to pay for the construction, also for permission to contract with the city for gas service at $52 per year each for forty-four lights for five years.

BELMONT, MASS.—The Arlington Gas Light Company has been granted permission to lay mains in Concord avenue and side streets.

BOSTON, MASS.—The R. H. Beaumont Company, Manufacturer of conveying and hoisting systems, Drexel Bldg., Philadelphia, Pa., has obtained a contract for a complete coke handling equipment for the Boston Consolidated Gas Company, consisting of a skip hoist, two steel bunkers and a screening system.

HULL, MASS.—It has been stated by officers of the newly organized Hull Gas Company that the lines of the system will be ready for operation by next spring.

LAWRENCE, MASS.—The Lawrence Gas Company has been granted permission to extend gas pipes in Middlesex and Third streets, Richardson avenue and Columbia Road.

HIGHTSTOWN, N. J.—The Board of Public Utilities Commissioners has granted the Hightstown Gas Company permission to install a gas system in this city.

ELMIRA, N. Y.—Application has been made to the Public Service Commission by the Elmira Water, Light & Railroad Company for permission to erect and maintain a gas plant in this city, which will provide gas which will mix with the natural gas when that supply is low. Plans and specifications for the new plant have been prepared and forwarded to the commission. The cost of the new venture is roughly estimated at $250,000.

FAIRPORT, N. Y.—Despatch Heat, Light and Power Company has applied for the franchise for the gas mains in Fairport.

ITHACA, N. Y.—The up-State Public Commission has approved the franchise of the Ithaca Gas & Electric Corporation for extensions of its gas and electric lines into the towns of Ithaca and Lansing.

VICTORIA, TEXAS.—C. H. Kellam, formerly of San Antonio, Texas, has applied for a 50-year gas franchise in this city. Mr. Kellam proposes to build a plant with a capacity of at least 100,000 cu. ft. and have it in operation by Dec. 31, 1917; the gas to be either artificial or natural, or both, for lighting, cooking, heating and power purposes. The maximum rate is fixed at $1.50 per 1,000 cu. ft. with the charge of 50 cents per month and no meter rent charges. In return for the franchise Mr. Kellam offers to give the city 10,000 cu. ft. of gas free each month. He also offers to pay all the expenses of submitting the franchise to a vote of the people.

WESTON, W. VA.—The Columbia Gas & Electric Company is arranging to sell the Hope Natural Gas Company and the Philadelphia Company of Pittsburg a large amount of its surplus gas in West Virginia. It is said the contract will call for 140,000,000 cu. ft. daily. The gas will come from the properties of the United Fuel Gas Company. The new pipe is to be built from this line to the Hope Natural Gas Company, near Weston, W. Va.

SHERIDAN, WYO.—More than three miles of gas mains for the Sheridan Gas Company have already been laid, and work on the construction of the plant will soon be completed. A thousand meters have been ordered for house services.

SHERIDAN, WYO.—John T. Bacon of the Pierce-Bacon Engineering Company which is installing the Sheridan Gas Plant is making a report to a group of Colorado capitalists for the installation of coke ovens in northern Colorado which will generate 10,000,000 cu. ft. of gas daily. Other products manufactured daily by this plant will be 12,000 gal. of tar, 2,300 gal. of ammonia liquor, dyes, and other coal tar products and carbons, for dry cells. The gas would be consumed by the city of Denver. It would also be used in generating power.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 20 cents.

1,193,166: MEANS FOR LIGHTING GAS-LAMPS. Charles F. McDonough, Cleveland, Ohio.

1,193,228: HIGH-PRESSURE GAS-LIGHTING SYSTEM. Lindsay F. Boyd, Hawksburn, Victoria, Australia.

1,193,700: AUTOMATIC LIGHTING AND EXTINGUISHING SYSTEM FOR GAS-LAMPS. George Keith, London, England, assignor of one-half to James Keith, same place.

1,194,223: GAS-PURIFYING APPARATUS. Herbert L. Pearce, Nickleville, Pa.

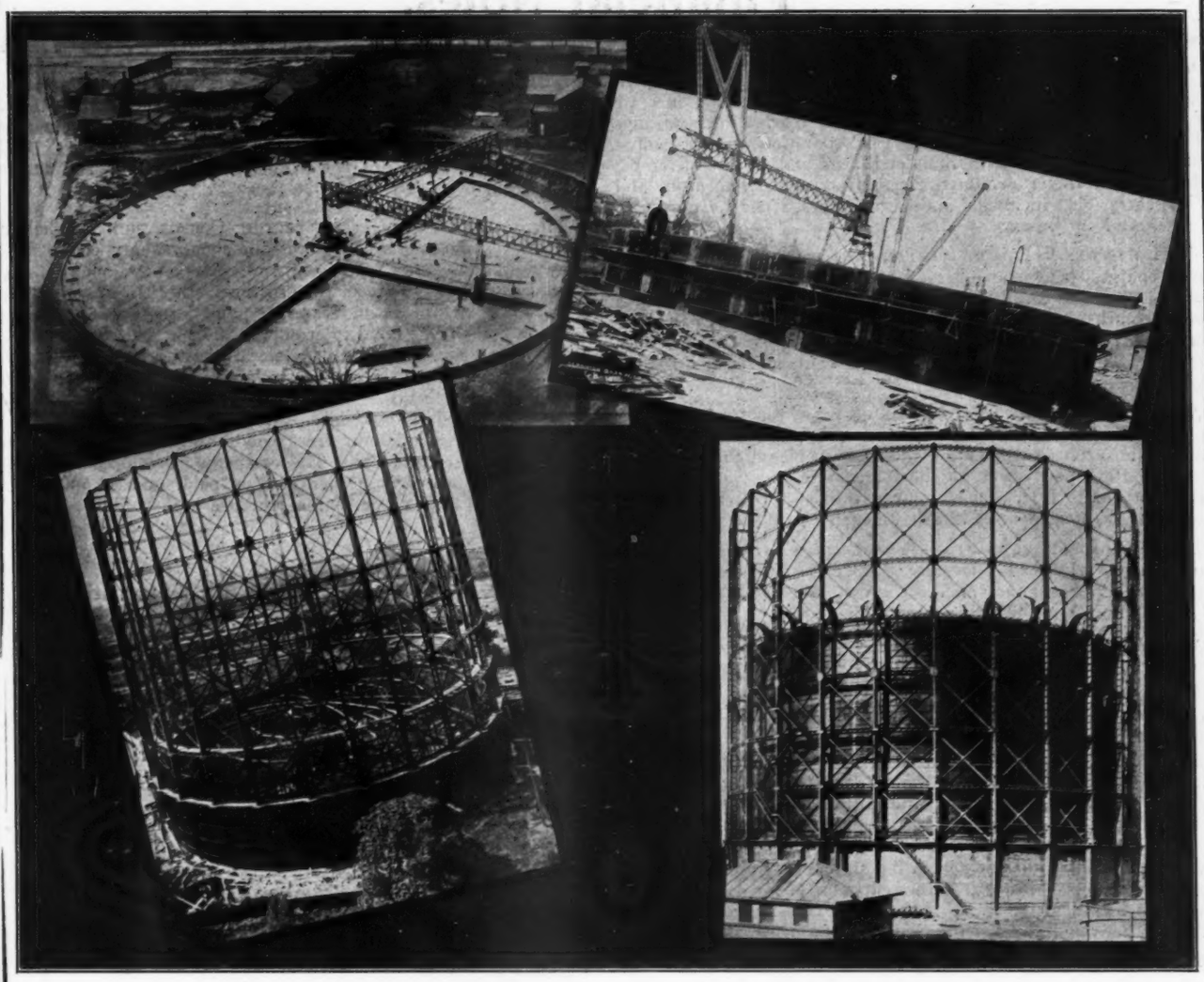
1,194,396: GAS-BURNER FOR WATER-HEATERS. George W. Lake, Rumford, R. I., assignor to Frank W. Smith, Providence, R. I.

1,194,730: GAS-PRODUCER. Samuel Glover, St. Helens, and John West, Southport, England.

1,195,047: GAS-BURNER. Charles Ludlow, Norwood, Ohio, and John Keown, Newport, Ky.

1,195,105: METERING FLUIDS WHICH HAVE AN INTERMITTENT FLOW. Lucian H. Sheldon, Schenectady, N. Y., assignor to General Electric Co.

1,195,161: METER. Marvin Smithey, Lawrenceville, Va.



RITER-CONLEY COMPANY

STEEL CONSTRUCTION

PITTSBURGH

HELME & McILHENNY

1339-1349 Cherry St., Philadelphia, Pa.

ESTAB. 1848 H & McI High Grade Meters

GAS METERS

HINMAN DRUM STATION METERS, FOULIS GAS GOVERNORS

PREPAYMENT METERS

REPAIRING AND CONVERTING

PROMPT SHIPMENTS - - - - - CORRESPONDENCE SOLICITED

Financial Notes.

THE UNITED GAS & ELECTRIC CORPORATION reports net earnings amounting to $2,906,539 for year ended June 30, increase of $678,963, or 30.5 per cent over previous year. Gross earnings $14,363,685, a gain of $1,171,894. Corporation operates under names of its subsidiaries in Buffalo, Elmira and Lockport, N. Y.; Bloomington, Ill.; Colorado Springs, Harrisburg, Lancaster, and Wilkesbarre, Pa.; Richmond and Terre Haute, Ind.; Leavenworth, Kan., and New Orleans.

THE WISCONSIN EDISON COMPANY earned a balance after interest charges, taxes and other expenses for twelve months ended July 31, equal to $4.26 a share on stock. Operating revenue for twelve months, $9,582,632; increase of 13 per cent over preceding year. Net, $3,929,894; gain of 14.5 per cent. Operating revenues for July, $838,457; increase of 23.9 per cent, and net $312,351, gain of 25.7 per cent.

THE PUBLIC SERVICE CORPORATION OF N. J., reports an increase in gross business for July amounting to $383,795, or 12.4 per cent, while surplus available for dividends increased $90,172. For seven months ended July 31 the increase in gross business was $2,771,097, or 13.2 per cent. Surplus available for dividends after fixed charges, etc., was $2,972,189, an increase of $700,336.

THE PHILADELPHIA COMPANY reports gross earnings for July amounting to $2,253,146; increase, $323,175. Net, $825,773; increase, $80,291. Four months' gross, $9,427,221; increase, $1,352,269. Net, $4,094,894; increase, $647,814.

THE OHIO CITIES GAS COMPANY estimates place annual earnings at a rate of approximately 30 per cent on common stock.

THE COLUMBIA GAS & ELECTRIC COMPANY reports an increase in gross earnings for July amounting to $95,761. Net after taxes, increase, $74,048.

THE BINGHAMTON LIGHT, HEAT & POWER COMPANY has been authorized by the up-State Public Service Commission to issue sufficient 5 per cent first and refunding bonds at 88 and 88½ to realize $227,830 and to issue $95,000 6 per cent preferred stock at par, which with $77,300 remaining from previous sale will be used for completion of new generating station and other improvements. Total expenditure from present issue of securities on new plant will be $294,582, besides $40,290 on transmission and distributing lines and $60,000 for general betterments.

THE CONSOLIDATED GAS, ELECTRIC LIGHT & POWER COMPANY OF BALTIMORE reports, for year ended July 30, gross earnings amounting to $7,431,769, compared with $6,789,402 in previous year, and net of $3,583,692, against $3,212,819 a year ago. Balance after fixed charges and dividends, $1,131,803, against $1,064,629, with profit and loss surplus of $97,289, compared with $47,828 in previous year.

THE KANSAS NATURAL GAS reorganization plan provides for assessment of 75 per cent. on present $6,000,000 stock, as it is planned to issue $9,000,000 of new stock to be sold to present stockholders at $25 a share for shares of $50, par value. This will raise $4,500,000, of which $3,000,000 will be used to retire indebtedness. It would appear that success of plan is dependent on company obtaining higher price for gas. Opposition from Kansas Public Service Commission may be encountered, as some time ago company was ordered to reduce its capital stock by 50 per cent. and is now about to ask for permission to increase its capital by 150 per cent.

THE CUMBERLAND COUNTY POWER & LIGHT COMPANY reports, for June, gross earnings amounting to $243,379; increase, $23,721. Net after taxes, $94,936; decrease, $485. Surplus after charges, $28,200; increase, $3,806. Twelve months' gross, $2,759,843; increase, $208,580. Net, $1,125,337; increase, $18,816. Balance after preferred dividends, $197,475; increase, $6,164. For the year ended June 30 there was included in operating expenses for depreciation, $174,000, as compared with $48,000 for this purpose in the preceding year.

THE LOUISVILLE GAS & ELECTRIC COMPANY reports gross earnings for July amounting to $166,685; increase, $6,922. Net after taxes, $89,460; increase, $5,127. Twelve months' gross, $2,375,149; increase, $230,879. Net after taxes, $1,408,873; increase, $253,383.

THE REPUBLIC RAILWAY & LIGHT COMPANY reports that balance available for dividends earned in first seven months of 1916 was equal to annual rate of more than 7 per cent. on common stock contrasted with 2.12 per cent earned in the same period of 1915. July gross increased 30.1 per cent, net 21.4 per cent, and surplus 35 per cent over July, 1915.

THE CONTINENTAL GAS & ELECTRIC CORPORATION is a holding company controlling utility plants in about twenty communities of Nebraska and Iowa. The company is in the development stage, adding new properties from time to time. In 1915 gross earnings were $566,590, operating expenses and taxes $361,996, net earnings $204,594. Bond interest was $85,330 and surplus $119,264. There are $1,590,800 collateral trust bonds outstanding, secured by deposit of the capital stock of subsidiary companies and nearly all their bonds. There are outstanding, however, about $100,000 of underlying bonds. With earnings well over twice the interest, the collateral trust bonds are exceptionally strong for that kind of security. The company has $576,600 of preferred stock, on which 6 per cent is paid, and $1,500,600 of common, on which 2 per cent a year has been paid.

Current Prices of Public Utility Securities.

	Bid	Asked
Adirondack Elec. P.	26	28
Adirondack Elec. P. pf.	78	81
American Gas	120	123
*American Gas & Electric	148	151
*American Gas & Electric pf	49	51
American Light & Traction	380	384
American Light & Traction pf.	109	111
American Power & Light	69	71
American Power & Light pf.	84	86
American Public Utilities	42	47
American Public Utilities pf.	73	76
Amer. Water W. & Elec.	8	9
Amer. W. W. & E. part'g pf.	22	24
Amer. W. W. & E. 1st pf.	62	65
Carolina Pow. & Lt.	28	31
Carolina Pow & Lt. pf.	97	100
Cities Service	292	295
Cities Service pf.	86½	87½
Colorado Power	24½	26½
Colorado Power pf.	99½	101½
Commonwealth, Pr. Ry. & Lt.	63	65
Commonwealth, Pr., Ry. & Lt. pf.	84	86
Denver Gas & Electric gen 5s.	96¾	97¾
Electric Bond & Share pf.	100	103
Empire District El. pf.	88½	92½
Federal Light & Traction	10	13
Federal Light & Traction pf.	45	48
Gas & Electric Securities	290	—
Gas & Electric Securities pf.	95	100
Northern States Power	86	88
Northern States Power pf.	96	97½
Pacific Gas & Electric	58	59
Pacific Gas & Electric pf.	89	91
Republic Ry. & Light Co.	37½	38½
Republic Ry. & Light Co. pf.	75	77
*Standard Gas & Electric	15	15½
*Standard Gas & Electric pf.	39	40
Tennessee Ry., Light & Power	10	12
Tennessee Ry., Light & Power pf.	49	50
Toledo Trac., Light & Power	40	44
Toledo Trac., Light & Power pf.	80	84
United Light & Railways	50	52
United Light & Railways 1st pf.	74	76
Western Power	19½	20½
Western Power pf.	69½	71

*Par value $50